# Publishable summary

Human capital is a key strategic resource for leading organizations in the global knowledge economy, more so in Living Labs. There is the need to first develop the necessary human capital, which subsequently needs to respond dynamically to the ever changing global market pressures and the evolution of individual personal goals. In addition, there is need to leverage the transfer of tacit knowledge within communities and organizations. The ideal personalized competence development is tailored to reduce the lead-time for a learner to achieve their target productivity: the “time-to-competence” (TTC). TARGET provides a way for organizations to shorten TTC, faster and at lower cost than the usual approach: a bespoke (hand-crafted) face-to-face or blended course, which tends to be resource-intensive (expensive to create and deliver). The TARGET Project explores and integrates five relevant research fields:

* **Threshold Concepts**, resembling knowledge gateways that transform a person’s understanding of a knowledge domain
* **Knowledge Ecology**, resembling a “living organism” sustained by communities of knowledge workers
* **Cognitive Load Theory**, according to which a learner’s attention and working memory is limited and therefore learning processes must be designed to allow effective internalization without overload
* **Learning Communities**, where members of a community develop their competences by leveraging the experience of their peers
* **Experience Management**, to allow learners to accumulate lessons learned through real and theoretical situations through the use of serious gaming

The main aim of the TARGET Project is to research, analyse, and develop a new genre of Technology Enhanced Learning (TEL) that provides individuals and enterprises with a new responsive learning environment, supporting rapid competence development, namely knowledge workers within the domains of living labs (innovation) and project management.

More information, including contact information, is on the project’s website: [www.reachyourtarget.org](http://www.reachyourtarget.org)

During the first year of the project, the following are the main components of work undertaken:

* Development of the TARGET vision with system requirements and translating these into a conceptual framework (functional blueprint) and system architecture (technical blueprint).
* Development of cognitive models for learners for the domain of project management, outlined the augmented TARGET mentoring process, and creating the TARGET learning process and how this can be integrated into the organizations of users.
* Development of the TARGET integrative framework based on knowledge building blocks and a knowledge framework.
* Understanding the initial learning context and competence set of the two domains of project management and innovation, and starting the development of the competence analyzer tool.
* Development of the methodology for seeding and nurturing of communities and the community analysis framework.
* Development of the agent framework and non-player character to appear in the TARGET system.
* Establishing a game design wiki, creating a first “cardbox” prototype of the TARGET system, and two additional prototypes
* Development of the evaluation methodology to be used throughout the project, including formative evaluation to be using in parallel with the system development process.
* Creating a dissemination strategy and plan, leading to the establishment of the TARGET portal and the execution of numerous dissemination tasks, including publications, newsletters, etc.

In sum, this has produced the following achievements so far:

* A strong and clear TARGET vision converted into the conceptual framework and system architecture.
* Elaborate game scenarios that will implemented later in the project.
* The TARGET learning process, placed in the context of the integrative framework.
* The initial learning context and competence sets for project management and innovation management.
* The community methodology and analysis framework.
* Technical solutions for various components of the TARGET platform.
* Different prototypes demonstrating the look, feel, and functionality of the TARGET game engine.
* The evaluation methodology to be used in TARGET.

As the project progresses, the final results expected to be achieved are:

* The TARGET conceptual framework, which defines the conceptual blueprint of TARGET, identifying the main concepts involved, namely the integrative framework, competence development using serious games, a hybrid learning process that integrates mentoring and peer-to-peer learning of communities of practice, the evaluation process combining competence performance with psychophysiological framework, cognitive learning paths that are adaptive and pedagogical agents to support the learning process;
* The TARGET knowledge model, to define the model, and respective ontologies along with the content creation model, that relates the game scenarios, threshold concepts and competences. The model will accommodate the “wisdom of crowds” to contribute towards the maturing of knowledge.
* The TARGET learning process, supported by a pedagogical framework for the use of the TARGET platform, highlighting the interplay between the various stages of the process.
* The TARGET platform, which supports the TARGET Learning Process, consisting of multiple tools and services, which can be extended. The core service is the Virtual Business Environment (VBE), a serious game targeting the domains of project management and innovation.
* Pedagogical agents, that are available to assume unfilled roles within a game scenario. Each role shapes and configures an agent, which becomes a character to engage with user(s) in the corresponding game scenario. In addition, the baseline pedagogical agent framework will also support personal mentors to support the activities of a human mentor thus ensuring continuous availability of the mentoring process for users.
* TARGET communities, where TARGET aims to establish and foment a sustainable TARGET community involving different stakeholders:
  + Learners. This corresponds to the users of the environment that undergo the TARGET Learning Process supported by the TARGET Platform.
  + Mentors. This corresponds to all mentors who are both *certified* (individuals recognized by a certification authority) and *reputable* (individuals recognised by the various TARGET communities);
  + Universities. These stakeholders consist of the universities that agree to adopt to deploy TARGET in some measure within their organization
  + Enterprises. These stakeholders encompass the enterprises that agree to adopt to deploy TARGET in some measure within their organization
* HRM Integration, consisting of the development of a phased integration strategy of TARGET within an organization, ranging from just extraction of competence profiles from the HR system, to full seamless integration.
* Evaluation framework, the TARGET evaluation framework of a learner’s competence development, which can be at different levels of sophistication depending on the cost and the resulting effectiveness. The simplest implementation of the framework is based on performance indicators measurement whilst the most complex relies on psychophysiological measurements.

TARGET's form of responsive environment will deliver added value on each dimension, compared to today's mainstream learning environments and tools, which do not effectively address dynamic competence development in a short time with flexible learning contexts of varying complexity and longevity. In addition, TARGET will make it easier for employers to provide training that treats each learner as a unique individual, with different cognitive abilities, emotional intelligence, personality, knowledge and experience. The approach taken by us is not to develop a single solution tailored to all learners, but rather to support mass-individualization, helping learners to attain novel ways of understanding and the ability to think with different perspectives.